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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,228	11/01/2000	Dale Obeshaw	DP-300398	2389

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EXAMINER

ZIMMERMAN, JOHN J

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 06/19/2002

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/704,228

Applicant(s)

OBESHAU, DALE

Examiner

John J. Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/4/02 (RCE).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 and 22-30 is/are allowed.
- 6) ☒ Claim(s) 12-13, 15-21, 31-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s) _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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OFFICE ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 4, 2002 has been entered.

Amendments

2. The Amendment Under 37 CFR 1.114 received June 4, 2002 has been entered. Claims 1-13 and 15-41 are pending in this application.

Claim Rejections - 35 USC § 112, First Paragraph

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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4. Claim 41 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. It is not clear where the original disclosure discusses that the contoured inner and outer layers of the invention must be “solid” (e.g. see claim 41, lines 2 and 3).

Claim Rejections - 35 USC § 112, Second Paragraph

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 41 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The term “solid” (e.g. claim 41, lines 2 and 3) is indefinite since it is not clear whether the term is intended to describe the physical state of the inner and outer layers (i.e. not gaseous and not liquid) or the cross section of inner and outer layers (i.e. without an internal cavity). The disclosure does not appear to address the use of the term “solid” as it is used in claim 41.

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Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claims 16, 20 and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Logan (U.S. Patent 6,227,252 B1).

10. Logan discloses a hollow contoured structural member comprising a contoured inner layer, an intermediate honeycomb layer and a contoured outer layer (e.g. see Figures 1-4). Logan may not disclose the same process steps, but the rejected claims are product claims and not process claims. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Particularly note that in claims 35 and 36, the shrink wrap is added *and* removed and therefore would not be present in the claimed final article.

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11. Claims 16 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilkinson (U.S. Patent 4,161,231).

12. Wilkinson discloses a hollow contoured structural member comprising a contoured inner layer, an intermediate honeycomb layer and a contoured outer layer (e.g. see Figures 1-4).

13. Claims 34 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Mann (U.S. Patent 3,332,446).

14. Mann discloses a hollow contoured structural member comprising a contoured inner layer, an intermediate wrapped ribbed structure layer and a contoured outer layer (e.g. see Figures 1-2). Regarding claim 35, Mann may not disclose the same process steps, but these claims are product claims and not process claims. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Particularly note that in claims 35, the shrink wrap is added *and* removed and therefore would not be present in the claimed final article.

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15. Claims 34-35 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Frease (U.S. Patent 1,677,714).

16. Frease discloses a hollow contoured structural member comprising a contoured inner layer, an intermediate wrapped ribbed structure layer and a contoured outer layer (e.g. see Figures 1-5). Regarding claim 35, Frease may not disclose the same process steps, but these claims are product claims and not process claims. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Particularly note that in claims 35, the shrink wrap is added *and* removed and therefore would not be present in the claimed final article. Although it is noted that claim 41 requires that the inner and outer layers are "solid", there appears no doubt that at least some of the inner and outer layers of Frease are without internal cavities. Applicant's use of "comprising" opens the claims to additional non-solid layers in addition to the "solid" layers.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 12-13, 15, 17-19 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Logan (U.S. Patent 6,227,252 B1).

19. Logan discloses a hollow contoured structural member comprising a contoured inner layer, an intermediate honeycomb layer and a contoured outer layer (e.g. see Figures 1-4). Regarding claims drawn to specific materials, Logan may differ from these claims in that Logan only discloses examples of Grade X65 steel (e.g. see column 3, lines 21-23) for his contoured structural member. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use any conventional materials for the contoured structural member that might be suited to particular structural requirements and particular environments in which Logan's structural member might be useful. The examiner notes that light metals (e.g. aluminum, titanium, etc. . .), composite materials and stainless steels are conventionally used in piping. The use of these different materials for piping is a mere matter of engineering choice to meet the economics and structural requirements of piping. In recent years, composite materials have been found to be useful for higher strength and lower weight structural applications and they have been substituting more and more often for noncomposite materials. One of ordinary skill in the art would find obvious substituting composite materials or light metals for the materials of

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Logan to take advantage of their lower weight and better economics and therefore their use in Logan's structural configuration would have been considered an obvious variation on the disclosure of Logan. Regarding article claims that recite the method by which the article is made (e.g. claim 39-40), Logan may not disclose the same process steps, but these claims are product claims and not process claims. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

20. Claims 5-13, 15-20 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frease (U.S. Patent 1,677,714).

21. Frease discloses a hollow contoured structural member comprising a contoured inner layer, an intermediate wrapped ribbed structure layer and a contoured outer layer (e.g. see Figures 1-5). Regarding claims drawn to specific materials, Frease may differ from these claims in that Frease may not disclose specific materials for his contoured structural member. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use any conventional materials for the contoured structural member that might be suited to particular structural requirements and particular environments in which Frease's structural member might be useful. The examiner notes that light metals (e.g. aluminum, titanium, etc. . .),

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composite materials and stainless steels are conventionally used in tubing. The use of these different materials for tubing is a mere matter of engineering choice to meet the economics and structural requirements of tubing. In recent years, composite materials have been found to be useful for higher strength and lower weight structural applications and they have been substituting more and more often for noncomposite materials. Composite materials can be worked and shaped in much the same manner as noncomposite materials. One of ordinary skill in the art would find obvious substituting composite materials or light metals for the materials of Frease to take advantage of their lower weight and better economics and therefore their use in Frease's structural configuration would have been considered an obvious variation on the disclosure of Frease. Regarding claims to specific intermediate layer configurations that may not be disclosed by Frease (e.g. honeycomb cores), the examiner notes that honeycomb configurations are now considered conventional for core materials that have good load bearing properties. In view of the above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use any conventional core configuration known for load bearing properties for the core of Frease because Frease discloses that this is the purpose of the intermediate layers. Regarding article claims that recite the method by which the article is made (e.g. claims 39 and 40), Frease may not disclose the same process steps, but these claims are product claims and not process claims. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the

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examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

22. Claims 12-13, 15-21 and 31-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cappa (U.S. Patent 5,848,767).

23. Cappa discloses forming contoured honeycomb structures by applying an inner face sheet to a mandrel and bending a honeycomb core about the mandrel followed by applying an outer face sheet. Cappa then applies a bag around the structure and uses a vacuum to compact the contoured honeycomb structure while the adhesives are cured (e.g. see column 4, line 64 - column 6, line 59). Cappa differs from the claims mainly in that Cappa uses a metal honeycomb core and composite sheet inner and outer layers while applicant claims various combinations of metal inner sheet and/or outer sheet construction or combinations of metal and composite sheets in the contoured structure construction. However, Cappa discloses that in order to save weight and meet various requirements for spacecraft, manufacturers in industry have been substituting composite materials for various parts of aluminum structural elements (e.g. see Background of the Invention - column 1, lines 6-67). In addition, it is noted that using metal for the face sheets in structural honeycomb articles is conventional in the art since metal faced honeycombs are conventionally used in the construction of airplane and aerospace structures. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use any

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combination of composite and metal materials that would best suit the portion of the spacecraft that would be made by Cappa's process because the skilled artisan in this art would find the use of metal and/or composite material face sheets to be an obvious variation on the disclosure of Cappa. Although it is noted that Cappa uses a vacuum bag to secure his structure while it is curing and applicant recites a shrink-wrap materials in some of the pending claims, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a shrink-wrap material performs the same function as the vacuum bag of Cappa and therefore it would not be a patentable distinction over Cappa's disclosed process.

Response to Arguments

24. Applicant's arguments filed with Amendment Under 37 CFR 1.114 received June 4, 2002 have been fully considered but they are not persuasive with regards to the remaining rejections.

25. Applicant argues that the rejection of the claims under 35 U.S.C. 102(e) as being anticipated by Logan (U.S. Patent 6,227,252 B1) is improper since the claims now require the use of a continuous sheet and the disclosure indicates that the use of a continuous sheet does not result in butt joints (e.g. see page 23, lines 7-8 of the specification). The examiner notes that it appears that the lack of butt joints discussed in the specification is only associated with the use of continuous sheets which form a plurality of inner and/or outer layers. Rejected claims 34-36 only require a single inner and outer layer and Logan discloses the use of a single continuous sheet

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forming the inner layer and a single continuous sheet forming the outer layer. The inner and outer sheets of Logan do not appear to be made of multiple pieces and thus they are considered single continuous sheets over the extent of the inner layer and the outer layer.

26. Applicant's amendments to the claims have overcome the rejection under 35 U.S.C. 102(b) of claims 34-36 over Wilkinson (U.S. Patent 4,161,231), but the new amendments to claims 16 and 20 have broadened these claims (these claims previously required a plurality of layers although applicant's marked copy of the amendments does not show that these limitations have been removed) so that they are now anticipated by Wilkinson.

27. Applicant's cancellation of claim 14 has overcome the rejection under 35 U.S.C. 102(a) over Ohrn (U.S. Patent 6,116,290).

28. Applicant argues that the rejection of claims 34-35 under 35 U.S.C. 102(b) as being anticipated by Mann is improper since the claims now require the use of a continuous sheet and the disclosure indicates that the use of a continuous sheet does not result in butt joints (e.g. see page 23, lines 7-8 of the specification). The examiner notes that it appears that the lack of butt joints discussed in the specification is only associated with the use of continuous sheets which form a plurality of inner and/or outer layers. Rejected claims 34-36 only require a single inner and outer layer and Mann discloses the use of a single continuous sheet forming the inner layer and a

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single continuous sheet forming the outer layer. The inner and outer sheets of Mann do not appear to be made of multiple pieces and thus they are considered single continuous sheets over the extent of the inner layer and the outer layer.

29. Claims 34-35 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Frease (U.S. Patent 1,677,714) since Frease discloses the use of plurality of inner and outer layers of material. Rejected claims 34-35 only require a single inner and outer layer and Frease discloses the use of at least a single continuous sheet forming an inner layer and a single continuous sheet forming an outer layer. The at least one inner and outer sheets of Frease do not appear to be made of multiple pieces and thus they are considered single continuous sheets over the extent of the at least one inner layer and the at least one outer layer. Although it is noted that claim 41 requires that the inner and outer layers are "solid", there appears no doubt that at least some of the inner and outer layers of Frease are without internal cavities. Applicant's use of "comprising" opens the claims to additional non-solid layers in addition to the "solid" layers.

30. Regarding the rejection of the claims under 35 U.S.C. 103(a) as being unpatentable over Logan (U.S. Patent 6,227,252 B1), applicant argues there is no motivation to modify Logan to use other materials. The examiner notes that light metals (e.g. aluminum, titanium, etc. . .), composite materials and stainless steels are conventionally used in piping. The use of these different materials for piping is a mere matter of engineering choice to meet the economics and

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structural requirements of piping. In recent years, composite materials have been found to be useful for higher strength and lower weight structural applications and they have been substituting more and more often for noncomposite materials. One of ordinary skill in the art would understand that it would be obvious to substitute different materials for the materials of Logan to take advantage of their lower weight and better economics and therefore their use in Logan's structural configuration would have been considered an obvious variation on the disclosure of Logan. The examiner notes, however, that submerged pipeline construction is only Logan's preferred end use (e.g. column 2, lines 7-12) and one of ordinary skill in the art at the time the invention was made would understand that Logan's invention would be useful in any pipeline environment which requires lightweight and resistance to pressure differentials.

31. Regarding the rejection of the claims under 35 U.S.C. 103(a) as being unpatentable over Frease (U.S. Patent 1,677,714), applicant argues that it would not be obvious to substitute other materials in Frease. The examiner notes, however, that the use of any conventional materials for the contoured structural member that might be suited to particular structural requirements and particular environments in which Frease's structural member might be useful would be obvious because it is merely a matter of engineering preference to meet the economic, environmental and structural requirements of Frease's design. The examiner notes that light metals (e.g. aluminum, titanium, etc. . .), composite materials and stainless steels are conventionally used in tubing. The use of these different materials for tubing is a mere matter of engineering choice to meet the

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economics and structural requirements of tubing. In recent years, composite materials have been found to be useful for higher strength and lower weight structural applications and they have been substituting more and more often for noncomposite materials. Composite materials can normally be worked and shaped in much the same manner as noncomposite materials. One of ordinary skill in the art would find obvious substituting composite materials or light metals for the materials of Frease to take advantage of their lower weight and better economics and therefore their use in Frease's structural configuration would have been considered an obvious variation on the disclosure of Frease.

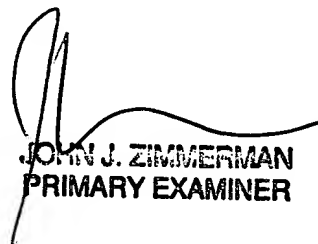
32. Applicant argues that the rejection of the claims under 35 U.S.C. 103(a) as being unpatentable over Cappa (U.S. Patent 5,848,767) is improper because the skilled artisan would have understood that the manufacturers are moving towards substituting composite materials for aluminum for the inner and outer face sheets of spacecraft frames which is exactly the opposite of the proposed modification in the rejection. The examiner notes however, that the very fact that Cappa discloses that in order to save weight and meet various requirements for spacecraft, manufacturers in industry have been substituting composite materials for various parts of aluminum structural elements is an admission that alternate use of aluminum (although not as desirable from the weight standpoint) is considered an obvious variation by one of ordinary skill in the art for these structural elements and therefore the basis for the rejection is correct.

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Allowable Subject Matter

33. Claims 1-11 and 22-30 are allowable.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Zimmerman whose telephone number is (703) 308-2512 and whose fax number is (703) 872-9311.



JOHN J. ZIMMERMAN
PRIMARY EXAMINER

jjz
June 14, 2002